

## **ABSTRACT**

An AC power source light modulation apparatus is used for broadcasting useful data from a computer system to one or more specialized optical detectors located within any given space illuminated by standard electrical light fixtures all connected downstream from this same power source. The AC power modulation impressed by this system on the power signal, causes imperceptible changes to the light output of electrical lamps being supplied electricity from this common AC power source. This invention may be installed at any AC power source located upstream of one or more standard light fixtures in order to induce changes that may include deltas in amplitude and phase in the luminous output of these light fixtures. Changes in the electrical ambient illumination are produced by this modulated power signal which result in the broadcasting of optical signals that are received, demodulated and decoded by a specialized type of optical data receiver. This optical data broadcasting network includes a new type of optical networking card or optical receiver, capable of demodulation and decoding changes in the characteristics of the light output of the electrical lamps, which are generally imperceptible to the human eye. The AC power source light modulation apparatus and the optical receiver units comprise an optical data broadcasting network that provides a low-cost and single-point installation for applications where the lowest cost and the simplest indoor wireless infrastructure is desirable by users. Including applications such as the automation of prices in retail and supermarkets and for use by other applications that require optical communications for data broadcasting and remote wireless networking systems.